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ABSTRACT

Critics of television hope that cable television will broaden the scope of programming to include more diversity, more news, more local programming, more visibility for minority groups, and greater use of the medium for the presentation of contending views. This paper reviews what now exists and what is being planned in an effort to determine the viability of this hope. It looks at the regulatory framework in which experiments in origination have been and will take place; at a typology of origination efforts; at government and foundation efforts to encourage experiments in origination; and at possible courses of inquiry of the Sloan Commission and its staff. The general feeling of the paper is that the outlook is not bright for broader programming; the few promising experiments are only in the planning stages awaiting funding. (JY)

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CONTENT ON CABLE: THE NASCENT EXPERIENCE

Monroe E. Price

September, 1970

A Report Prepared for the
SLOAN COMMISSION ON CABLE COMMUNICATIONS

The opinions expressed herein are the views of the author and do not reflect necessarily the opinions of the members of the Sloan Commission on Cable Communications or of the Alfred P. Sloan Foundation.

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Critics of television can be divided into two groups: ameliorists and radicals. The ameliorists seek a little more diversity, more news, more local programming, more visibility for minority groups, a greater use of the medium for the presentation of contending views. The radicals are more concerned with the structure of the industry, the means of regulating access, and perhaps most important, with the public perception of what to expect on the screen. Cable has offered hope to both the ameliorists and the radicals. This paper looks at what now exists and is being planned as a portent of what will develop. We look 1) at the regulatory framework in which experiments in origination have been and will take place; 2) at a typology of origination efforts; 3) at government and foundation efforts to encourage experiments in origination, and 4) at possible courses of inquiry for the Commission and its staff. On the whole, the picture is depressing. The ameliorists are likely to prevail, but even for them victory may be cheerless.

1. The Regulatory Framework

a. The origination channel.

The regulatory policy toward cable origination has been ambivalent. For some time, the FCC was worried that programming by the cable operators would fragment the audience and, like imported signals, undermine the audience for local

stations. In the Second Report and Order, 2 FCC 2d 787, the FCC suggested it would prohibit origination on cable, restricting its role to a supplemental service. Undermining of the market allocation pattern would be particularly severe if the cable system engaged in mass programming, such as old movies and re-runs. The FCC was also concerned, at a second level of reluctance, about permitting cable systems to sell advertising on local origination channels. One reason has been the constant theme in the literature that advertising is the villain of television, responsible for the mass appeal approach. A second reason has been the prevailing myth that advertising should not be available on channels available only on subscription.

The counter-arguments have always been clear: cable systems can provide local origination material on a scale which is impossible for over-the-air broadcasters; cable operators, in the search for subscribers, will cater to significant minority tastes; and cable channels offer advertising opportunities to local businesses which cannot purchase the large geographical spread over the air audience.

The merchant problem is symptomatic. Cable interests could argue that the profile of the retail sales industry reflects access to television. Only chain stores with dispersed outlets can afford television. A store owner in Brooklyn will not buy television time because he is purchasing audience in Queens and the Bronx. The attractiveness of

advertising makes merger more enticing. Political candidates at a local level could make the same plea. In the major cities, television is almost out of the question even for Congressional candidates because they cannot purchase the huge unrelated audience which automatically comes packaged with their constituency. And towns and suburbs without their own over-the-air station are totally precluded from the use of television as part of the political process.

In December, 1968, the FCC began the process of resolving the issue of origination. In a policy shift it clearly indicated that some origination would be compelled from CATV as a price of becoming a significant factor in the communications arena. Moreover, since the beginning, the FCC had been trying to encourage local programming, first through the allocation of VHF channels, then through the encouragement of UHG franchises, then through regulations and review procedures. CATV appeared to have some potential for removing frustration. Indeed, one way to look at the history of the FCC's regulation of television is to see attempt after rebuffed attempt to have television become the "mouthpiece of the community," as the FCC once put it (in a radio case). Now cable presented a stellar opportunity for the FCC to achieve its goal. The President's Task Force on Communications Policy also saw cable communications as a method for reaching, through local origination, goals long held for over-the-air television. The Task Force Report listed as goals of a national broadcasting policy: 1) broadcasting

should have the ability to "cater to as wide a variety of tastes as possible, the tastes of small audiences and mass audience, of cultural minorities and cultural majorities; 2) broadcasting should serve as varied as possible an array of social entertainment and advertising; 3) broadcasting should provide an effective means of local expression and local advertising, to preserve the values of localism and to build a sense of community; 4) the cost of access to the medium should be as low as possible; 5) unnecessary cost barriers to viewing should be avoided; 6) there should be a healthy measure of decentralization of control of broadcasting. After analyzing the history of over-the-air television, the Report concluded that the present structure of the industry made achievement of the above goals unlikely and that much of the hope for future attainment lies with cable television. Even pay-television, the staff report concluded, would not "add substantially to TV program variety" if existing over-the-air channels were the exclusive means of distribution of the additional signals.

The major FCC origination condition on cable systems -- reaffirmed in July 1970 -- is that the cable system "operate to a significant extent as a local outlet by originating" if it wishes to carry any broadcast signal. At first, the FCC suggested that this condition be imposed upon all cable systems; it has, however, relented, and only systems with more than 3,500 subscribers will be required to originate

starting April 1, 1971. At the outset, the FCC was much cooler toward the use of advertising; in its first set of proposed rules it suggested that advertising would be permissible only in small cable markets where there were no other outlets. Again, it relented and will allow advertising regardless of system size but only at something which the FCC has mystically determined are "natural breaks" in program offerings (motion pictures cannot be interrupted; but a time-out in a sports event is a natural break).

The requirement to originate is wholly within the ameliorist tradition. While it is difficult to suggest, as to content, what the FCC hoped to achieve on this compelled origination channel, it can best be seen as a low-budget local station, much like a struggling UHF. In its current rulings, the FCC has said that there will be few constraints and few expectations as to content. While the CATV will not be able to qualify by leasing time to a radio disc jockey, there is little affirmative prescription. The cable systems must have sufficient equipment (cameras, etc.) so that the mechanical barrier to access for local people is removed. But the FCC has indicated that, at the beginning, it will not require a great deal, and its enforcement policy will be lax.

Some critics have found the soft origination requirement worse than none at all. The prognosis, in the industry as well as outside, is that origination will mean, by and large, the cheapest commercial material possible. What the content of the origination channel is likely to be is treated subsequently in this paper.

For the more radical critics, the origination requirement is totally counterproductive. The opportunity is seen to divorce the transmission function from the content production function. Problems of concentration and cross-ownership are softened if the cable entrepreneur does not produce programming and control access. Furthermore, the origination requirement contributes to the old perception of television--"stations" and "programs." Furtheremore, if one were to select a class of persons to be enfranchised by the government to operate 1,000 new television channels, the class selected would not likely be the cable television industry. They have a background in selling cable, in writing up neighborhoods, in determining picture quality. But with few exceptions, they have not demonstrated that they -- as opposed to others -- should control access for origination purposes into the home.

b. Other channels.

In its Second Further Notice of Proposed Rulemaking, issued in July, 1970, the FCC indicated that in addition to the single channel which would be authorized for origination

(in larger systems) there might be compelled other channels which would have the following content functions:

> "(a) Local government channel: At least one channel for use without charge by local governments and for free political broadcasts during primary and general elections.
>
> "(b) Local public access channels. In order to facilitate further presentation of views, cable systems will be required to make channel time available on one or more channels at no cost to local citizens and groups which are not engaged in programming for advertising revenue, but which desire to present views on matters of concern to them.
>
> "(c) Leased channels. Cable operators would make available to third parties, either permanently or on a one-shot basis, channels for commercial operation by the third parties.
>
> "(d) Channels devoted to instructional uses . . ."

It is in the plan for these channels that much of the hope for radically different perceptions of television lies. That is especially true of (b) and (d). Under the proposal, any system which carried over-the-air signals would be compelled to fulfil these functions before carrying distant signals or its own origination station. In a sense, much of the Sloan Commission's work and effectiveness will depend on the regulatory development of the local public access notion and the leased channel notion.

At the present time, the prospects for both of these ideas are vague. While the FCC has talked of common carrier status and here of public access, the machinery for achieving FCC goals is completely undeveloped. The fundamental question of who will determine the allocation of channel time and the

choice of groups for the local public access channels is yet to be determined. Other papers in this series, including Franz Allina's paper on the First Amendment will surely discuss this problem. Similarly, while leased channels are suggested, the FCC is painfully aware of CATV resistance to treatment as a public utility. As a consequence, it is unclear who will choose the rates and assure nondiscriminatory access by users.

It is through these leased channels that the most fundamental attack on the over-the-air channels may be launched. Competing networks, oriented to minority tastes, may lease time on a string of systems. Leased-time segments, for commercial purposes, might provide competition for the regular course of over-the-air television. Some leased time access, however, might approximate the present television uses; one entrepreneur is attempting to presell to advertisers six or ten hour tapes which will be delivered to each selected system.

The hope of some economists, including Bruce Owen at Brookings, is that the whole system becomes common carrier in nature with all producers of programming required to lease time from the cable entrepreneur. At some point, the traditional over-the-air channels would have access on the same basis as other producers, instead of the present compulsory carriage arrangement.

2. Present origination efforts

It was thought useful to provide for the members of the Commission some notion of the present efforts at origination in the industry. Since the FCC has imposed an origination requirement which is only seven months away, one might suppose that some cable entrepreneurs are diligently considering uses. Yet the experience under the new requirement will be an exercise on the limits of regulation. For the industry, by and large, which once proclaimed its versatility now finds the imposition of origination distressing. Many systems have found that the revenue increase which was foretold for cable advertising is difficult to obtain; where many channels of over-the-air television are offered, only with adroit programming does an additional origination channel provide additional subscribers. Most important, there is a virtual failure of imagination; many systems are resigned to do the least possible in terms of compliance with the FCC edict. And the least possible often means obtaining the cheapest film material available and running it a fixed number of hours each day.

With that promising introduction, we turn to a typology of origination efforts: 1) the extent to which cable is fulfilling the goal of localism; 2) special subscriber-supported programming; 3) experiments involving whole systems and new towns; 4) experiments in community access; 5) the alternate media movement; 6) experiments in service uses. Because of the plausibility of the hypothesis that there is an important relationship between ownership and content, some

experiments in ownership are explored. Finally, there is an effort to look at the need for experiments in equipment as it relates to the hope for changes in content.

For all the promise of cable, the norm is quite a dismal one. There is a great deal of bravado about local origination by cable operators; origination has been used by the cable industry as a way to become a more equal partner in the communications arena. The National Cable Television Association has trumpeted cable as a technique for bringing television to the people, for providing an outlet for local expression, for bringing government closer to the people and the people closer to the government. At the shiny moment when franchises are awarded by municipalities, promises are particularly bountiful. The cable company serenades the city with the extraordinary opportunities that will open up to it; channels are customarily set aside for municipal and educational uses.

The truth of the matter is that based on past experience, there is precious little collected wisdom on how the new channels can best be used. Experimentation has been sporadic at best. Federal interest by executive branch agencies has been nil. In San Jose, California, a cable system with 42 channel availability is now being installed. The cable manager has virtually no idea who the users of channel time will be, what kind of equipment would best suit those users, where studio facilities should be located, what kinds of cost

arrangements should be made, etc. In Oakland, the City Council has worked over a five-year period to obtain the optimal mix of rate and service structure for the cable system. Thousands of hours were spent in perfecting the technical standards. Yet not one moment was lavished on the relationship between the technology and the non-entertainment needs of the city. No group or agency within the city is thinking of how cable can assist Oakland in performing its various missions. In Akron, one of the largest companies in the field, TeleVision Communications, is installing a 40-channel system. Cable is being laid but, again, there is no effort in Akron to determine what would be the best uses of the cable. The recent franchise award proceedings in New York displayed the same absence of a sense of the precise uses of the medium. Because no community group sensed a foreclosed opportunity, there was little opposition. Minority groups sensed that there would be new job opportunities in the communications field and, as a consequence, appeared before the Board of Estimate to seek guarantees that the franchisee would take affirmative action to make jobs available. Minority groups did not sense the important content opportunities available through cable and, therefore, like other groups, did not feel that they had a stake in the outcome.

The lack of experimentation by cable operators is understandable. As previously indicated, until late in 1968, it

it appeared that cable operators might be discouraged from functioning in any other way except as a carrier of signals. Further, the cable operators as a group are more interested in hardware than they are in content. Like the early radio pioneers, they are often local engineers, practical and hardy men concerned primarily with surmounting technical problems. Even for those who are more visionary, economic constraints have precluded a great deal of innovation. The federal government and foundations have been surprisingly absent from funding research and demonstration efforts in cable. Thus, the nature of the industry, the regulatory constraints and the absence of outside interest and funding has resulted in a thin harvest of innovation.

In spite of these obstacles, there are some efforts which are worthy of report because they indicate directions which cable might take.

1. The first trend is toward the creation of cable facilities which can accomplish the goals of the FCC in relation to over-the-air broadcasters in the late 1940's and early 1950's. Early in the history of television regulation, the Commission made a conscious choice to proliferate local stations rather than build strong regional stations. Because of the vagaries of spectrum, a decision to have local stations in Albuquerque, Phoenix, Santa Fe and their equivalent meant over the long run that three rather than four commercial networks would be created. The availability of local program outlets was

bought, then, for a price: the reduction in the number of channels available to each home and a reduction in the number of central programming sources. Unfortunately, the goal of localism has never been quite realized; most local stations have become conduits for the network. Local live origination proved too expensive and too boring to sustain. Regulatory efforts to compel local live origination have been relatively fruitless. By and large, except in large cities, the local affiliates fill non-network time with other syndicated material, on film or on tape.

Cable television offers some promise for the renaissance of local live origination. Both the costs and the expectation for originated material on cable is far lower than for equivalent material sent over-the-air. The equipment is far less expensive and cable origination is not so labor intensive. A camera for cable television may cost $12,000 for color capability; for a broadcast studio the matching camera may cost $75,000.

There are some cable systems which are operating as moderately decent local stations of the 1950 sort. For a variety of reasons, the cable operator is conscientiously providing an up-to-date studio, adequate professional personnel and a regular series of presentations, such as news and local discussion programs. This is particularly true in cities like Pittsfield which have substantial cable systems and no over-the-air broadcaster. It is also true of the cable systems in large Canadian systems such as Montreal

or Vancouver. In essence, the cable operator, on the channel which he reserves for his own use, becomes an independent moderate sized station.

There is nothing especially innovative about these operations; it is important to mention them, however, because excellence in cable origination is often determined in terms of our expectation for over-the-air television. Under the newest FCC ukase, cable managers of large systems plan to operate one channel almost as if it were a small independent over-the-air station. There will be some difference (how much is difficult to state) attributable to the fact that the cable manager will be trying to maximize subscriber revenue rather than advertiser revenue and for him local live origination is more competitive with syndicated material than was true for the independent UHF or VHF manager.

Here, of course, cable can make great contributions, just as over-the air communications does. Sterling Manhattan Cable may show an excellent half-hour documentary on drug use; a system in Farmington, New Mexico has a weekly report from its Congressman; a system in Liberal, Kansas shows sports events. Because of the rather primitive level of operation of cable origination until now, such coherent efforts are greeted as if they were extraordinary departures.

Present developments will be fostering this trend. As a result of the FCC rule requiring origination in

the larger systems, there is a frantic search for program material. A number of entrepreneurs are seeking to enter the industry as syndicators of programming. In late spring, the National Cable Television Association held a special meeting for vendors of software and cable purchasers. There is general agreement that the meeting was an aesthetic if not a financial disaster. Packages offered include recycled series, promotional films, montages from the cutting room floor. Other entrepreneurs are preselling advertising and putting together five-hour tapes of programming and advertising which will be traded back and forth among subscribing systems.

In short, there is no evidence to believe that great breakthroughs will be forthcoming from the origination attempts of cable operators. There will be more outlets of communication, but not much more will be communicated.

2. A second range of experiments now in the planning stage relates to subscriber supported programming. There are some difficult technical problems which must be surmounted. These problems, which are often blithely discounted in the puffing which frequently takes place, relates to the production of the necessary scramblers, filtering devices and converters. There is not now in production a suitable set of devices. Assuming, however, that the technical difficulties are overcome, the impact on program and production alternatives are quite interesting. The plans of one corporation, TeleVision Communications, can serve as an example. TVC is representing approximately 80 cable systems who are making deals with

independent packagers to present offerings with a per channel charge to the subscriber. At present, four channels (a channel is really a certain number of hours each week) are planned. TVC will package a motion picture channel which will be offered to subscribers at $5 per month over the basic cable charge. A second channel, prepared by Encyclopedia Brittanica Foundation will be an education and information package for $2.50 per month per subscriber; there will also be a special package offered only to doctors who use the system which will be composed primarily of material supplied by pharmaceutical companies. The cable operators will charge 40% of the subscriber fee as the price for leasing the channel. Assuming that the package is 25 hours per month, the lease charge is then ten cents per hour per guaranteed viewer. A system which has 500 guaranteed viewers will be leasing time for $50 per hour. The programming implications are, of course, almost endless. TVC will market any package. They become high-priced mailmen delivering a variety of magazines to anxious subscribers.

There will undoubtedly be great speculation over what interests will be injured if such an approach begins to flourish. Motion picture exhibitors may suffer more than "free" network television; public broadcasting, because it more nearly approaches the magazine of minority interests, could be eroded substantially. The enterprisers hope that the availability of these new sources of revenue will mean new productions tailor-made for audiences which could not

be reached previously, or where financing of productions was impossible.

There is great opposition to the per program or per channel charge, not only by the motion picture exhibitors and others whose economic interest will be adversely affected, but also by persons who wish cable to avoid the mass marketing concepts of over-the-air television and supply needs which are not presently served. Except for the anti-siphoning rules (the restrictions on certain motion pictures, sports events and series presentations) a workable rule has not been developed. Under the proposed regulations, cable operators will be encouraged to lease channel space on a basis similar to a common carrier. If lessees are permitted to solicit subscribers for payment (and it is hard to see why they should not), then a good many lessees will produce programming which will appeal to the largest minority possible. Of course, audience maximizing has its limits; undoubtedly there will be a Gilbert Harrison or an American Ballet Theater which will be satisfied to ferret out a sizable minority.

"Pay" programming over cable television already exists. Sterling Manhattan attributes a healthy portion of its sales to its exclusive rights to certain professional sports events emanating from Madison Square Garden, including the New York Knicks. And there are not a few households which now pay $60 each year to a cable company because they

could not otherwise obtain Sesame Street. The difficult problem is devising a system whereby Sesame Street could obtain part of the $60, but also safeguard its wide and free distribution.

3. Systems approaches.

By far the most interesting set of proposed experiments involve comprehensive efforts, starting with cable as a new form of communication, to alter consciously and wisely the environment in which the facility is located. The Bedford-Stuyvesant Development Corporation has long weighed the potential for bringing cable to its area. United Utilities, an independent telephone company, has been working to develop a model inner-city cable communications system in Kansas City; a group called Mafundi has drawn plans for a facility in Watts; Time-Life is nurturing a cable system in Columbia, Maryland to demonstrate the potential for cable as it is built into a community from the beginning. Similarly, HUD has built cable into its plan for a new town, Jonathan Village. Inforcor, a corporation related to the ownership of the Montreal Star, is planning a 28-channel model system for 5,000 households in Montreal.

These efforts and the few others like them would be more pleasant to report if they had moved beyond the paper stage, but they are all locked in various stages of articulation. No funding agency, private or public, has yet extended substantial research and demonstration funds, except for studies, and substantial frustration is the result. Almost

uniformly, the ambitious proposals are for areas where there is no cable in place, so that the investment necessary is quite great. In each case, the experimenters feel they must gain the normal franchises so that they can gain monopoly profits to fund their public service efforts.

a. Kansas City

The Kansas City, Missouri effort is exemplary. Several executives of a major utility company and a prominent Negro radio station owner in Kansas City have worked for over two years to obtain funds to test the hypothesis that "communications technology, and in particular cable television technology . . . can be applied as a potent positive social force toward the alleviation of social ills and the improvement of individual and community life." The vehicle for accomplishing this goal would be a National Laboratory of Urban Communications (NLUC) which would manage and program a model cable facility serving approximately 25,000 households. In addition to the carriage of commercial channels, the NLUC cable would have one and perhaps more urban channels which would provide approximately 15 hours of daily originated programming. The NLUC facility would have, as one of its primary goals, the training of people from the community served for technical and programming tasks in cable and television generally.

The general objectives of the project are to provide a forum to the community through which there will be a continuous flow of information, discussion, opportunity for

development of new leadership, dissemination of information by agencies engaged in public services. For example, NLUC sees "urban television" as providing electronic outreach in such areas as health service, communicating to inner-city residents the availability of baby clinics, health centers and emergency services.

The Laboratory has taken the Model Cities proposal for the target areas and attempted to suggest ways in which cable television channels could be used to achieve objectives already determined to have priority within the community. Pre-school, adult and vocational education are among these priorities. The methods suggested by the proposal do not always seem wholly workable; in many ways, the proposal reflects the propensity among proponents of cable television to consider that improved and expanded channels of communication can provide solutions for heretofore intractable problems. In the area of crime and law enforcement, for example, the Laboratory suggests the use of cable television to encourage reporting of crime and information about law breakers, to "dramatize real life situations of the community where citizen involvement might have worked." Proposed suggestions such as the cablecasting of weekly meetings between precinct captains and residents, public announcement of dispositions of complaints against police officers, and special efforts to recruit and train minority policement and a rumor control information are sound and useful.

Of course, the important point is that no one knows what kind of an impact a cable television system such as the one envisaged for Kansas City can have through use of the channels to expand services. Some of the ideas suggested may be pie-in-the-sky; other, bolder concepts may not occur until the system is functioning. Unfortunately, the road to receiving the $7.5 million assurances over the next three years has not been easy. The Office of Economic Opportunity, after an extensive presentation and long consideration, decided not to fund the project. Several reasons were given. First, OEO determined that it would be preferable to fund demonstration projects in areas already cabled so that the basic investment would not require subsidization. Second, there were difficult issues involving program control. The staff at OEO did not feel that the Board of Directors, which had ultimate control, was sufficiently community-oriented. Furthermore, in light of the cost of the system, the OEO staff did not consider the proposal to have a large offering of urban, as opposed to commercial, services. Finally, a prohibition on OEO funding for direct operation of certain media forms was perceived as an obstacle.

As a result of the OEO rebuff, the planners of NLUC have determined to apply for the Kansas City franchise and make the urban laboratory part of the franchise package. The hope would be that the profits forthcoming from the

regular cable services and additional pay television services would provide sufficient funds for the running of the training and community facility. Further, the government agencies to be benefitted would provide some funds as they do for the leasing of space or provision of services through other modes. To ensure the continuation of the urban laboratory, there would be a requirement of operation in the franchise document.

b. The National Training Laboratory for Watts.

The Mafundi Institute, a group promoting the arts in South Central Los Angeles has assembled a proposal for wiring 3,000 households in Watts and tying them to a center for programming and training blacks in television programming and installation and maintenance of CATV facilities. One assumption of NTL-Mafundi is that CATV is an industry where substantial growth will take place and that federal funds should be expended in creating CATV-related skills in minority groups. A second assumption is that the installation of cable will permit training in programming and production necessary to fill a community channel.

The primary distinguishing feature of the NTL proposal is that it expects to install two-way interactive equipment through Vicom Industries, Inc., a small Los Angeles engineering firm. Vicom promises to deliver equipment which can convert cable easily into two-way capability and also provide the home facility with video originating equipment. Each home in the 3,000-home area, and each community center

or school could become an originating facility and could communicate with a discrete set of other homes in the system. NTL expects, therefore, to make its demonstration a technical and engineering tour de force as well as a training site.

The soft uses of the demonstration have not yet been fully amplified. NTL has not attempted to articulate specifically what the content objectives will be of the CATV system in Watts. Like the NLUC proposal in Kansas City, the NTL-Mafundi effort seeks to "breach the barriers to communication that exist in the black ghetto." Closely affiliated with the Community Film Workshop Council concept, NTL will place great emphasis on the opportunities presented to the young and the talented to develop skills in video techniques. There is already a HUD-financed Mafundi Cultural Center which is associated with the Pacifica-affiliated FM station in Los Angeles and the Community Film Workshop Council. Further software uses of the medium will be explored by Mafundi at a proposed conference of cable operators, representatives of government agencies and others to be held in Santa Barbara in October.

c. <u>The Waianae-Leeward Oahu proposal</u>.

In a multi-ethnic community in Leeward Oahu, there is a cable system which has approximately 50% penetration of a community with 35,000 people. There has been formed a Waianae Community Television Committee which has been given access to seven channels of a twelve-channel system. Again,

there is the beginning only of what uses could be made for the channels in a small community. As one part of the proposal, the Committee would integrate the communications facilities with the model cities program in the Waianae communities; thus, efforts there to increase English literacy, to provide job training, to improve the quality of education, to provide outlets for activities for young people so as to combat juvenile delinquency, to involve the community intensively in the solving of its problems would all be facilitated by making available channels of communication. In addition, special segments would be furnished to the various ethnic groups represented: the Japanese, the Filipinos, the Portuguese, the Hawaiians and the Anglos. Third, one channel is presently being made available on an open channel basis to political candidates.

At present, the Waianae project, like its brethren, is unfunded. There are attempts to obtain assistance from Model Cities, so that portions of the regular operating budget are devoted to cable uses to achieve Model Cities objectives. Unlike the two previous proposals, a cable system is already in place and the operator is beginning to institute some of the content aspects of the proposal without federal or private funding. There is, however, no evaluation, no technique developed to assess the value of informal experiments presently going forward.

d. Montreal.

Cable T.V. Ltd., which operates a CATV system on the west end of the island of Montreal, has some 40,000 subscribers. The area is now fully wired with a conventional 12-channel system which, because of the 4 local VHF stations, is reduced to 8. A minimum of 16 channels taking into account the need to program in both official languages is seen as necessary. The system owners are on a crash program to develop a multiple channel system and, to this end, are building a 5,000-household model in a high income, suburban community this year. Next year, they will rebuild a downtown, residential area to multiple channels covering about 30,000 households. With the information developed from these two experiments, they will plan the complete rebuilding of the system. The President of Inforcor, Mr. David Ferguson, has suggested that the Sloan Commission might be interested in these model systems and is extremely willing to cooperate.

e. New Towns.

There are several New Town projects involving cable television and origination. Reston has a system and has begun origination; it is presently of the small local station variety. Dale City, another suburban community in Virginia which, from time to time considers itself a new town, had a local origination facility which died because of inadequate funding and lack of volunteer support. A much more ambitious program is being planned at Jonathan Village in

Chaska, Minnesota. The Jonathan Development Corporation is working with Stanford Research Institute to use cable as an integral part of community development. It is unclear what SRI has in mind, but the analyst working on the project, Mr. Charles Grubb, indicated that he has isolated 98 uses of the cable to replace other means of performing tasks. He was unwilling to disclose the 98 uses. Time-Life is dispatching Mr. Richard Krolick to Columbia, Maryland to develop that system into a model for Time-Life's cable interests. The Columbia system may be a fruitful area for experimentation because of the corporate commitment; at the present time, however, Time-Life is at the beginning of the planning stage.

4. Experiments in Community Access.

Much of the rhetoric concerning cable television relates to the accessibility of the medium, the way in which it can serve as a forum, its ability to "break down barriers to communication" as the NTL-Mafundi proposal puts it. In theory, cable can serve as a community forum because of the excess of channels and the simplicity of the equipment needed. Unfortunately, much of the experience with access is likely to produce pessimism. Bona fide efforts of over-the-air television have often had dismal results. There are countless dark channels, countless hours where, in particular, UHF stations have made time available for community groups, but no one has come forward. Second, there is some disillusioning experience among cable operators. Irving Kahn is said to

be pessimistic about community participation based on early efforts to make his Harlem studio available.

Part of the difficulty is that community access is thought to be an easy matter -- the mere announcement of channel availability. There are indications, however, that the process of obtaining community access is much more complex. There are several experiments either started or planned which might provide guidance.

a. Newburgh, New York.

The Center for Understanding Media, a McCluhanite satellite, has funded (with money derived from the Ford Foundation) a project called ECCO (Experiment in Community Communication). It consists of a studio, installed in the storage room of an old Newburgh hotel, equipped with several simple cameras, some portable equipment and recording, editing and special effects machinery.

The extraordinary aspect of ECCO is that all the material produced is by young people from the ages of 13 to 20. At the present time there are about fifty young people regularly involved with two older supervisors. The young people each day produce a tape about 90 minutes in length which is delivered to the head end of the cable system and played as received. The contents of the tape vary considerably. Some of the material apes commercial television; there are interviews and discussion. Some of the material is art for art's sake, the use of the camera to create abstract patterns. One sixteen-year-old prepared a long documentary on the peace

demonstration in Washington and the hard-hat demonstration in New York City.

ECCO began in affiliation with the Newburgh school system but it was ousted after pressure from John Birch members in the community who accused ECCO of involving the young people and their teachers in "group sensitivity" sessions, apparently a Communist ploy. What is interesting for this paper, however, is that to succeed ECCO was required to do far more than announce that a facility would be available for young people to prepare video material. ECCO became a kind of club, an object of allegiance for a fairly large number of young people from the high school. The students control ECCO in the best sense; they spend substantial amounts of time there. It is an independent facility, using, but not related to, the cable system.

At the present time, there is no systematic effort to evaluate ECCO, and one may even question what the criteria for evaluation should be. The most obvious criterion is also the most troubling one. Do the people of Newburgh watch the daily ECCO offering? First, it is impossible to know. There is little feedback, some recognition, but nothing quantifiable. Second, it is hard to tell what would constitute an acceptable answer. There are 12,000 homes on the cable. If 40% are watching at 6 p.m. when ECCO is cablecast, the potential audience is 4800. Assuming that ECCO competed equally with the other 10 signals (including network news) it would have an audience of 480 households. A fair expectation

might be 100 homes -- one-quarter of the proportionate draw.

There are more noticeable impacts. First, there is the effect on the young people themselves. Newburgh has, perhaps correctly, a fatalistic sense about its own doom as a place with potential. There is a general assumption that everything will run downhill. ECCO, for many of the young people involved, is the first major indication that they can really do something, and that something can be really done in Newburgh. Their perception of television, like their perception of most things, is that what occurs at home is determined elsewhere, that it is out of their hands. Newburgh, of course, has no television station so that the notion that one could see Newburghians on the screen itself was an outstanding event. Second, the project has had some impact on the school, though perhaps different from what was planned. The original idea was to expand the television curriculum already offered at the high school and use the cable channel as an outlet for expression. Instead of enriching the curriculum, however, the ECCO project has underscored its deficiencies. Various community groups, such as the YMCA, have asked the ECCO students to make a promotional documentary about their summer camp; other groups have made similar requests. Because they are producing, because the ECCO project is accomplishing something in a society that long ago decided it was unlikely to be wholly productive again, the students are gaining some degree of respect among the townspeople and the city officials.

Television, peculiarly enough, has also been a bridge into other activities for the young people involved. Two students at ECCO decided to do a tape on retarded children in Newburgh. Through the camera they became more personally involved and established a teen-age group to work with mentally-retarded children. The camera provided a way of entry into areas of concern that would not have otherwise been breached. With a camera the young people see the city differently.

b. The Community Film Workshops.

Established by the American Film Institute and funded through the National Endowment on the Arts and the Office of Economic Opportunity, there are spread through the country a number of film workshops designed to train members of minority groups and disadvantaged whites in video techniques. The original impetus was film; but television has become an additional aspect of the CFW efforts. There is, for example, a national program to provide entry for blacks and Mexican-Americans into the television news field.

In one branch, the Appalachian Film Workshop, located in Whitesburg, Kentucky, there is an effort to utilize cable television in connection with the goals of the CFW. Eastern Kentucky is served by about 30 fragmented cable systems, none with more than 2,000 subscribers. Altogether there are about 25,000 subscribers in the area. The cable lines meander up into the hollows, providing a line of communication that is not even matched over-the-air because of the interference from

the mountains. At present, the cables are not used for any purpose other than the distribution of commercial signals. Almost all of the systems have some excess channel capacity.

Young members of the Film Workshop, mostly between 18 and 21, have been developing professional talents as producers of video material of broadcast quality. Unlike Newburgh which seeks to involve a large number of young people and which seeks to enhance a sense of communications rather than develop professional skills, the Appalachian Film Workshop seeks to provide intensive direction to a much smaller number of participants.

Because video techniques are cheaper, the Appalachian Film Workshop has turned to using Sony portable equipment and 1/2-inch tape. They have produced short tapes, including recordings of high school athletic events in Eastern Kentucky, short humorous documentaries on the life of a majorette and what young people do in Whitesburg on a Sunday morning. Until recently, the tapes made have not had any outlet, even in Whitesburg itself. The Film Workshop is now negotiating with the local cable system for time to be made available.

One of the difficult questions is who should pay whom in such a transaction. Is the cable operator obtaining a benefit for which he pays when the Workshop provides him with taped material? Or is the cable operator providing the Workshop with a benefit, through the leasing of time? The answer to this question is basic to the technique for expanding the Film Workshop concept throughout Eastern Kentucky.

The present plan is to establish a community production center administered by the Workshop. Each day tape would be prepared for presentation on the 30 cable systems, both at a central facility and through two mobile facilities. The Workshop would not only produce program material, but it would also provide assistance to the cable systems and their subscribers who were seeking to originate programs. Finally, they would work with government agencies who sought to use the cable as a method of delivering services of providing information about the availability of services.

The Appalachian Regional Commission, a federal agency which seeks to coordinate federal activity in Appalachia and which has its own funding capability, is considering financing the Eastern Kentucky venture. It looks at the project as a way of interesting the young people of Appalachia in the problems of the region and thereby, hopefully encouraging them to stay.

In this project, as in the Newburgh effort, community access is not taken for granted. It is understood that before there is a feeling that the opportunity is truly available, the managers of the project must painstakingly begin to build expertise in the community. Furthermore, in both cases, the projects are not viewed as the cable equivalent of broadcast stations. Instead it is perceived as a separate production entity, a place to experiment, an independent enterprise part of whose product goes to the cable operator for transmission over the cable.

These two projects -- Newburgh and Whitesburg -- also come closest to a possible ideal of divorcing oneself from the concept of the "program" the half-hour slice of life with inserted commercials. One problem with community access, it is always said, is the high cost of production and programming. The perception of the medium, both by producers and viewers, is that a certain kind of professional product must come through the screen. It is exceedingly hard to demonstrate what the medium would be like if that were not the only exclusive fare. It is difficult to articulate the alternative content; and it is difficult also to answer the question about who would watch the new kind of content. Only the Newburgh and Whitesburg experiments begin to cope with the question. For after a brief period when the students are confident about their mastery of the technology, they begin to shuck their preconceptions about the form that technology must produce.

c. Kingsport, Tennessee.

Another model for community access -- including some useful techniques for financing -- is being developed in Kingsport, Tennessee. A system there has tentatively offered to place $2,000 to $3,000 monthly in a special fund to be used by a separate and independent production center. There is some notion to petition the FCC for a plan whereby the five percent public dividend, now directed toward public television, could be used in this manner for the financing of local production. The separate entity -- to be called the

Kingsport Community Origination Center -- would also have a call on a limited amount of channel time each day (perhaps two hours). As in the Newburgh project, the Center would deliver an appropriate tape each day. On occasion, local live transmision would also be provided. It is expected that the Kingsport Center will also receive funding from the Appalachian Regional Commission. One staff person with the Center will be concerned solely with establishing ways in which federal, state and local agencies could make better use of cable channels for the delivery of services or the transmission of information about services. An additional function of the Center will be to spawn other independent production units. For example, there is some hope that funding for local production for the elderly and by the elderly might be forthcoming. Such a Center would be promotional as well as productive. It would seek in a variety of forms to encourage community participation in the production of material. It would provide technical assistance as well as equipment and space.

5. The Alternate Media Movement.

Somewhat related to the Newburgh and Whitesburg approaches, but much more professional in their iconoclasm, are certain groups, predominantly in New York, which seek to develop a communications eatablishment for the underground, for the communes, the new culture -- a video equivalent of the underground newspaper. A typical example is Videofreex, a production center in lower Manhattan. Videofreex consists of highly

qualified engineers, some of whom are dropouts from the networks, dropouts from advertising agencies and others. They are doing extremely sophisticated work with quite inexpensive equipment (one-half inch and inch tape equipment). At the present time they do not have a medium for distribution except through a video theater which they have constructed. In form, their work does not differ materially from that of the networks; they are professionals within a tradition. In content it varies in the way that the Los Angeles Free Press varies from the Los Angeles Times. In the language of the day it is adult video, for mature audiences only. The subject matter ranges from the communes to Black Panther interviews to tapes on the Gay Liberation march in New York.

For Videofreex, and for organizations like it, the portable television camera is a weapon -- mightier both than the pen and the sword. They are interested, not only in content but in accessibility. For them, alternate media means the development of alternate sources of supply, engineering talent, means of distribution. Broadcasting, with its elephantine machinery and high-priced production, would make an alternate media approach almost impossible. Cable television, and the new video technology, makes the alternative fare more feasible.

6. Service uses.

There are only bits and snatches of service uses for cable television. There is a magazine devoted to the

continuous efforts to link cable to the education system and to encourage school-home interconnection. There is more progress in the use of cable for educational services than in other areas. The major difficulty in instructional uses is content, not technology. Dordick's study of Telecommunications in South Central Los Angeles, which recommended installation of a multi-channel system, pointed out the instructional advantage of multiple repitition of instructional material at different sectors of the day. Most instructional television systems are too limited in number of channels to obtain such time flexibility. In the health services area, the Sloan study staff was introduced to the Logan Airport telediagnosis project, a two-way visual project where there is diagnosis by closed circuit television. The Logan Airport experiment is generally seen as useful; but there is insufficient data on cost per patient; on diagnostic limitations; on the patient perception of the quality of care. In Lake Charles, Louisiana, a cable system has interconnected doctor's homes and hospitals and offerred scrambling to protect the integrity of the distribution.

7. Research in Technology.

Another paper prepared for the Commission deals with the technological environment, with the potential of the rediffusion scheme, laser transmission, computer access, etc.

It is widely felt that two-way communication (in addition to multi-channel capability) offers the important revolution.

Of course, there is presently simplistic two-way communication through the use of the telephone from the viewer to the producer (the familiar format of the call-in shows on television). Sunnyvale, California has installed a two-way system with narrowband return. The Logan Airport telediagnosis scheme is two-way in the sense that there is one video channel from the hospital to the airport and another from the airport to the hospital. Picturephone, of course, is two-way video telephone with switching capability. Teleprompter has announced that it will install a sophisticated system with two-way capability at the end of the summer. And a Los Angeles Company, Vicom Industries, together with Communications Associates, a Santa Barbara Foundation, has developed a scheme in which there would be two-way plus switching, allowing each user to designate which other users should receive his video signal. As in Picturephone, each viewer site could also be an origination site.

Unfortunately, too little research and development is presently ongoing in the hardware aspect of cable communication. Almost each group contacted was involved with some technological breakthrough; but it was always "around the corner." A system in Montreal seeks to install 28 channels beginning in the fall, but it is unable to obtain delivery on converters which will allow the set to receive the channels. Top-of-the set converters are far from perfection; they are easily jostled and damaged. Filters which will allow selective reception -- a precondition for subscriber

financed per channel or per programming channel are nowhere in production. Two-way interactive systems are rumored constantly, but again, production has not yet commenced.

The basic receiving set itself is in need of drastic overhaul if the wired nation is to eventuate. It is now built specially to receive over-the-air channels and the tuner does not have adequate shielding to prevent interference between over-the-air signals and cable received signals. Because of the extraordinary investment in equipment and the fact that the vast majority of television households receive signals over-the-air, American manufacturers have not developed a special set (probably less expensive) for the exclusively cable consumer. Indeed, most franchises preclude the cable operator from selling or leasing receiver equipment.

Similarly, there is great need for research and establishment of standards in cablecasting equipment. Increased sophistication is necessary for two reasons. First, the present generation of video tape recorders suffers fatally from the lack of compatability: a tape produced on one machine cannot be replayed upon another. Distortions even occur on tapes played back on different machines by the same maker. The lack of compatability is a severe restraint on the potential for transfer of tapes among cable users; and it is only with such transferability that economies are realized. Second, the question of community access is vitally linked to the kind of camera

equipment which is made available. In the two projects where accessibility was great, the equipment used was half-inch tape equipment. But there is general agreement within the industry that only one-inch tape equipment provides material technically of broadcast quality. Both in terms of cost and portability, community access will likely only be great where equipment like the present half-inch cameras can be used.

8. Experiments in ownership.

The nagging thought persists that there is some relation between the nature of the ownership in a cable system and its content or performance. The cross-ownership rules prohibiting networks and same-city broadcast stations from owning cable systems are bottomed on this notion. Similar theories are behind the proposed FCC rules to limit the number of cable systems a single enterprise can own. Outside of prohibitions, it may be that some forms of ownership are more likely than others to produce a cable system which functions in the public interest. In Los Angeles, KCET, the educational television station, is considering seeking a franchise despite the seeming ban on all stations (including educational stations) from owning a system in the city where they function. Other public television stations are considering entry into cable, sometimes to wield the public interest, but at other times merely to make money.

In Frankfort, Kentucky, the municipality owns one of the cable systems and it is run by a separate board of directors.

Robert Bruce, now with the Public Broadcasting Service, wrote an extensive paper for the Director of the Budget, New York City, urging municipal ownership of the cable there. The Ford Foundation is considering the support of experiments in public ownership of cable systems on the assumption that only with public control is it likely that public interests goals will be achieved. The feeling is strong that the cable operator, whatever is said, will always lease channel space for the largest audience, he will be concerned with the pull of adjacent users, he will not take the risks necessary to test public uses. Here again, there has been virtually no research done. We do not know under what conditions municipal ownership or nonprofit ownership makes a difference. When public bidding is announced for the non-Manhattan New York City franchises, coalescence of community organization interest in the franchise is bound to occur. But there will be difficult questions of technical experience, financial ability that will serve to damage the opportunities of community groups. There will be little basis for determining the wisdom vel non of an award to a community group. If origination is divorced from ownership of transmission facilities, the argument for community ownership will have a different rationale.

3. Government and Foundation Efforts

It is reasonably clear that entrepreneurial efforts alone will not provide adequate experience for determining the potential for cable television. And without adequate experience, it will be difficult for the FCC to fashion appropriate regulations or have confidence in them. There are risks which the industry is unwilling to take. Experiments which would approach common carrier usage are resisted because of the implication that the industry should be regulated on a public utility basis. Control over content is maintained because of a felt need for the retained power to censor and to avoid liability for defamation. Settled patterns prevail. Cable operators, like viewers, have difficulty envisioning new uses for the medium.

a. The failure of the Executive agencies.

In the 1968 President's Task Force on Telecommunications Policy, recommendations urged greater Executive Agency intervention in the FCC decision-making process and more creative efforts to utilize television to accomplish mission objectives. The Justice Department has intervened on several occasions to advocate rules which grow out of its antitrust experience. But seldom has any other Department expressed its views before the Commission. Although the introduction of cable has important implications for the delivery of education, the Secretary of HEW has never submitted views to the FCC on optimal configuration, channel reservations, the relationship between cable and satellite development,

Similarly, regulations which require certain channel capacity, which require public service time at no or low cost, which impose equipment requirements on a system, could make it easier for the Department of Labor, for example, to use maturing systems for manpower training and job information services. Government agencies have an interest in seeing that the cabling process is uniform -- that poor as well as rich neighborhoods have broad-band communications capability. And government agencies might have some collective wisdom on the utility and appropriate allocation of the proposed Public Dividend.

Certainly there are other ways in which the executive agencies have a stake in the manner in which cable grows. Yet no agency has developed a position, no agency has asked itself how its piece of the public interest would be affected by cable.

Similarly, there has been no concerted effort by government agencies to test through research, demonstration and evaluation, the capability of broad band communication. To be sure, for the last five years, the literature has spilled over with suggestions that cable has promise in the area of assisting in the performance of government missions. But as far as understanding -- as distinguished from speculation -- we are still where we were.

OEO is an example. Although some officials spent a good deal of time discussing the Kansas City experiment described above, nothing has transpired. A request for proposals was

scheduled for distribution last spring. Consultants have come in and gone out. But no money has yet been invested in research and demonstration in cable. The Office of Legal Services has asked its Special Counsel to consider cable uses in connection with the delivery of legal services, but there has been no product. In HUD, there are one or two model cities programs which reputedly have some cable uses written in the basic contract, but such a proposal is a quirk rather than the product of coherent effort in central planning. The Office of Telecommunications Policy in the White House is considering the development of cable policy for the executive, but the Office is only now being restructured. At HEW, there has been appointed a new officer to consider communications policy, but no cable planning has occurred. The Appalachian Regional Commission, partly through the work of the Sloan Commission staff, is likely to fund the Eastern Kentucky and Kingsport, Tennessee projects described earlier.

b. Foundations.

Foundation support in cable has been almost exclusively for broad-scale study -- such as the present Sloan foundation grant -- and for providing advice in relation to franchises. The Ford Foundation has expended a large amount of money for a series of studies from the RAND Corporation. These include a forthcoming paper on origination by N. Feldman, a paper on federal regulation by L. Johnson and a paper on state and local regulation by R. Posner. Additional work

will be performed by RAND under a grant from the Markle Foundation. The Markle Foundation has assisted in development of research in the first amendment implications of cable (among other matters). Local foundations have provided some assistance in a few instances in the development of franchise policy.

Almost no money from foundations has gone into demonstration projects. Communications Associates (formerly the Brooks Foundation) in Santa Barbara has probably been the most persevering in seeking demonstration projects. Ford, somewhat accidentally, has funded the Newburgh project described above. The reasons for this absence of foundation support are difficult to assess. There is not yet a skilled group of grantsmen, adept at presenting novel ideas of significance in the field. Second, foundation support for television is largely directed to educational television. Third, there are not adequate cable system opportunities (in major cities for example) where experiments of utility could be fashioned. Perhaps, it is thought, when New York or Chicago is cabled, there will be an adequate and interesting subscriber base for demonstrations.

4. Courses of Inquiry for the Commission

Once patterns of expectation as to cable television become established, they will be difficult to change. As cable grows, as penetration in the major cities increases, the question of role, of perception of what constitutes acceptable origination, will be more difficult to answer in a

way which is different from the status quo. At the present time, the status quo does not have a significant constituency. Patterns can be altered quite easily. It is not difficult to tinker with the system and try alternatives. Yet too little is being done; the golden moment is passing. The Commission ought to address itself to ways in which useful testing of alternatives can be fostered.

The following lines of inquiry should be considered in designing tasks for the Commission staff:

1. What do we know about the circumstances in which the use of television (whatever the method of transmission) is productive (in terms of some prearranged set of goals). In the small conferences held this summer, the power of television to transmit information in a way that altered behavior was question -- although some were surprised at the scepticism. Do we know from advertising, from Sesame Street, in what form information must be packaged before it is absorbed? Is the preferred means of communication tied to the environment in which the communication is received? For example, there may be research on techniques of vocational education by television which provide some insight into changes in productivity where the training takes place in the plant or in the home, on a paid or free basis.

Before the Commission can explore usefully the advantages of cable which arise from multi-channel capability and selectivity, the Commission ought to know the limits of the medium.

2. The Commission's final report could usefully provide guidance to foundations and government agencies on the general design of demonstration projects to test appropriate uses of the cable. It might be useful to convene a small conference of representatives of interested foundations and government agencies to determine a strategy.

3. The Commission should maintain some close connection with incipient experiments. Inforcor, which is fashioning a comprehensive experiment in Montreal, has expressed interest in working wit the Sloan Commission. Jonathan Village, the HUD New Town mentioned above, should also serve as a useful experimental site. Certain cable companies, such as Teleprompter and Cypress Communications would also be willing to work with the Commission in one or several systems.

4. In much of the discussion of cable, save for a few cautionary comments, the emphasis has been on exploring the social benefits of extending the cable. There has not been sufficient attention to the social costs. It would be useful to look at social costs in the way that highway construction or SST investment is now being questioned. What does increased communication facility do to the American fabric; to the sense of dependence on technology; to the isolation of the individual and the family?

5. One difficulty in cable innovation is determining the extent to which increased communication capacity can alter

the structure of the agency or enterprise using the cable. For example, quite frequently a given profession -- say the health professionals -- think primarily in terms of doing what they are now doing better through increased access to television channels. It is much more difficult to convey the notion that mature cable communications systems may mean performing functions in a radically different way.

The staff might develop a short paper -- a model -- on how a particular service or mission is altered extensively by the availability of greater communications capability. Perhaps it would be easier to do this in the commercial realm than in the social realm. An odd example is off-track betting; would it make a difference to Howard Samuels if he had continuous access to a television channel? Would the entire shape of planning be structured differently? Second, there might be rapidly developed an approximation of change in some other area, such as manpower training and job information. Third, it might be useful to look historically at the impact of over-the-air television on the delivery of some service or change in some industry. If we knew more about what was changed by television, perhaps we would speak more clearly about what might be changed by cable.

6. There needs to begin immediately a cost-benefit approach to assessing the wisdom of certain proposed uses of cable. Perhaps the Logan Airport telediagnosis system

would be a good place to start since data has already been accumulated.

7. Far more attention must be given to techniques for lowering production costs or encouraging acceptance of material produced at relatively low cost. Origination requirements, the hope for localism, the opportunity for access will be in vain if techniques of exceedingly low-cost production are not demonstrated and fostered. And if cable television is to have content which is highly differentiated, new entrepreneurial and support forms must be devised.

The present state of the industry provides only slight hope that the great ambitions for cable communications will be fulfilled. Worse, the inaction of potential users -- government, the professions, community groups -- suggests that the present inertia will not easily be shaken.